

CLAIMS:

1. A reflection type color liquid crystal display device for displaying a color image formed based on unit pixels each comprising sub-pixels corresponding to primary colors by using extraneous light, which comprises:

5 a liquid crystal layer varying a state of light transmitted therethrough in accordance with electric field applied thereacross;

a reflection layer reflecting light which is incident thereon via the liquid crystal layer;

10 transparent electrode layer and pixel electrode layer for applying electric field to the liquid crystal layer for each of the sub-pixels in accordance with an image to be displayed, the transparent layer located on a side of one main surface of the liquid crystal layer on which extraneous light is incident, the pixel electrode layer located on a side of another surface of the liquid crystal layer on which light reflected from the reflection layer is incident; and

15 a color filter layer comprising portions which perform coloring of the primary colors for the light to be transmitted (or the light having transmitted) through the liquid crystal layer in correspondence with the sub-pixels, CHARACTERIZED in that:

the unit pixel further comprises a sub-pixel for increasing luminance; and

20 the color filter layer further comprises additional portions associated with the sub-pixels for increasing luminance, the additional portion transmitting light components of predetermined wave-lengths from the light to be transmitted (or the light having transmitted) through the liquid crystal layer.

2. A device as claimed in Claim 1, CHARACTERIZED in that the color filter layer is located on a side of the one main surface on which extraneous light is incident.

25 3. A device as claimed in Claim 1, CHARACTERIZED in that the color filter layer is located on a side of another surface of the liquid crystal layer on which light reflected from the reflection layer is incident.

4. A device as claimed in Claim 1, 2 or 3, CHARACTERIZED in that the light components of predetermined wave-lengths are white light.

5. A device as claimed in any one of Claims 1 to 4, CHARACTERIZED in that the reflection layer and pixel electrode layer are in the same layer and in common.

6. A light scattering film capable of being used in a liquid crystal device for displaying a color image on the basis of unit pixels comprising sub-pixels corresponding to primary colors, CHARACTERIZED in that the film comprises:

10 portions performing coloring of the primary colors for light transmitted thereof for each of the sub-pixels;

additional portions associated with sub-pixels for increasing luminance, the additional portions transmitting light components of predetermined wave-lengths from light incident thereon; and

15 a light scattering portion being extended over the whole of the film, and in that the additional portions and the light scattering portion are integrally formed from the same material.

7. A film as claimed in Claim 6, CHARACTERIZED in that the light components of predetermined wave-lengths are white light.

8. A method of manufacturing a light scattering film capable of being used in a liquid crystal display device for displaying a color image on the basis of unit pixels comprising sub-pixels corresponding to primary colors, CHARACTERIZED in that the method comprises:

25 a preceding step of forming coloring portions on a support member while forming spaces for additional portions which are associated with sub-pixels for increasing luminance and which transmits light components of predetermined wave-lengths from light incident thereon, the coloring portions performing coloring of the primary colors for light transmitted thereof for each of the sub-pixels; and

30 a succeeding step of filling the space and forming a light scattering portion extended over the whole of the film, with the same material which can be characteristic of transmitting the light components of predetermined wave-lengths.

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9. A method as claimed in Claim 8, CHARACTERIZED in that the support member is a transparent substrate located on a front side of a display screen in the liquid crystal display device.

5 10. A method as claimed in Claim 8, CHARACTERIZED in that the support member is a transparent substrate which is located on a rear side of a display screen in the liquid crystal display device and on which a layer of driving element array and a reflection layer are stacked, and in that the coloring portions and the additional portions are formed on the reflection layer.

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